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Attorney Docket No. 9266-2 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Baxter et al. Confirmation No.: 3743
Application Serial No.: 09/844,537 Group No.: 2162
Filed: April 27, 2001 Examiner: Jean M. Corrielus
For: **METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR COMMUNICATING WITH A CONTROLLER USING A DATABASE INTERFACE**

Date: April 17, 2006

Mail Stop Appeal Brief - Patents
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TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION--37 C.F.R. § 41.37)

1. Transmitted herewith is the APPEAL BRIEF for the above-identified application, pursuant to the Notice of Appeal filed on March 15, 2006.

2. This application is filed on behalf of
☐ a small entity.

3. Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is:
☐ small entity $250.00
☒ other than small entity $500.00

Appeal Brief fee due $500.00

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Traci A. Brown

Attorney's Docket No.: 9266-2 PATENT

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Serial No.: 09/844,537
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APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. §41.37

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed March 15, 2006.

Real Party In Interest

The real party in interest is assignee Triangle Open Gateway Automation, L.L.C., Raleigh, North Carolina.

Related Appeals and Interferences

Appellants are aware of no appeals or interferences that would be affected by the present appeal.

Status of Claims

Appellants appeal the final rejection of Claims 1 - 33, which as of the filing date of this Brief remain under consideration. Claims 1 - 5, 12 - 16, and 23 - 27 stand rejected. Claims 6 - 11, 17 - 22, and 28 - 33 stand objected to. The claims at issue as included in Appellants' response to the Office Action of June 15, 2005 are attached hereto as Appendix A.

Status of Amendments

Six responses have been filed in the present case: A "Request for Reconsideration" was filed September 25, 2003 in response to an Office Action mailed July 8, 2003. A "Response After Final" was filed January 7, 2004 in response to a final Office Action mailed November 7, 2003, which was not entered as indicated in an Advisory Action mailed January 23, 2004. A "Request For Continued Examination" was filed February 6, 2004 to allow the "Response After Final" filed January 7, 2004 to be entered. A "Request For Reconsideration" was filed May 25, 2004 in response to an Office Action mailed February 26, 2004. A "Response After Final" was filed November 23, 2004 in response to a final Office Action mailed August 23, 2004. A second final Office Action was mailed February 8, 2005. An Appeal Brief was filed March 23, 2005, but prosecution was reopened and a new Office Action issued June 15, 2005. A "Request For Reconsideration" was filed September 14, 2005 in response to the Office Action of June 15, 2005. A final Office Action was mailed December 15, 2005. No claims have been canceled in prosecuting the present application; therefore, Claims 1 - 33 remain for consideration on the present appeal.

Summary of Claimed Subject Matter

Appellants appeal the final rejection of independent Claims 1, 12, and 23.

Independent Claim 1 is directed to a method for communicating with a controller (controller 38, FIG. 4) in real-time by storing a command for the controller in a database (database 44, FIG. 4). The command may be a command to write a value of a real-time process control variable to the controller or a command to read a value of a real-time process control variable from the controller (command table 62, FIG. 4; Specification, page 8, lines 17 - 19). Upon detecting the stored command in the database, the stored command is sent to the controller (command interface module 86, communication driver 88, FIG. 4; Specification, page 9, lines 14 - 19).

Independent Claim 12 is directed to a system for communicating with a controller (controller 38, FIG. 4) in real-time comprising means for storing a command for the controller in a database. The database 44 and command table 62 of FIG. 4 provide structure corresponding to the means for storing a command recitation.

The command is selected from the group of commands consisting of a write command that is configured to write a value of a real-time process control variable to the controller and a read command that is configured to read a value of a real-time process control variable from the controller (command table 62, FIG. 4; Specification, page 8, lines 17 - 19). The system further comprises means for detecting the stored command in the database and means for sending the detected command to the controller. The command interface module 86 of FIG. 4 (Specification page 9, lines 13 - 16) provides structure corresponding to the means for detecting recitation and the command interface module 86 and communication driver 88 of FIG. 4 (Specification, page 9, lines 14 - 19) provide structure corresponding to the means for sending recitation.

Independent Claim 23 is directed to computer program product for communicating with a controller (controller 38, FIG. 4) in real-time comprising a computer readable program medium having computer readable program code embodied therein (database 44, memory 74, FIG. 4), the computer readable program code comprising computer readable program code for storing a command for the controller in a database (database 44, command table 62, FIG. 4), wherein the command is selected from the group of commands consisting of a write command that is configured to write a value of a real-time process control variable to the controller and a read command that is configured to read a value of a real-time process control variable from the controller (command table 62, FIG. 4; Specification, page 8, lines 17 - 19). The computer program product further comprises computer readable program code for detecting the stored command in the database (command interface module 86, FIG. 4; Specification page 9, lines 13 - 16) and computer readable program code for sending the detected command to the controller (command interface module 86, communication driver 88, FIG. 4; Specification, page 9, lines 14 - 19).

Grounds of Rejection to be Reviewed on Appeal

Independent Claims 1, 12, and 23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U. S. Patent No. 5,923,557 to Eidson (hereinafter "Eidson") in view of U. S. Patent No. 6,823,336 to Srinivasan et al. (hereinafter "Srinivasan").

Argument

I. Introduction to 35 U.S.C. §103 Analysis

A determination under §103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.* 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was unknown, and just before it was made. *Id.* at 1596. The United States Patent and Trademark Office (USPTO) has the initial burden under §103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a prima facie case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. §2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. §2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In another decision, the Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Appellants respectfully submit that the pending claims are patentable over the cited reference for at least the reason that the cited references do not disclose or

suggest, among other things, storing a write command for a real-time process control variable or a read command for a real-time process control variable for a controller in a database and then detecting the stored command and sending the detected command to the controller. The patentability of the pending claims is discussed in detail hereinafter.

A. Independent Claims 1, 12, and 23 are Patentable over Eidson and Srinivasan

Independent Claims 1, 12, and 23 stand rejected under 35 U.S.C. §103 as being unpatentable over Eidson in view of Srinivasan.

Independent Claims 1, 12, and 23 are directed to methods, systems, and computer program products for communicating with a controller in real-time. For example, Claim 1 recites:

> storing a command for the controller in a database, wherein the command is selected from the group of commands consisting of a write command that is configured to write a value of a real-time process control variable to the controller and a read command that is configured to read a value of a real-time process control variable from the controller;
>
> detecting the stored command in the database; and
>
> sending the detected command to the controller.

Claims 12 and 23 include similar recitations.

Thus, according to the recitations of Claims 1, 12, and 23, a write or read command for a controller is stored in a database. The stored command is detected and then sent to the controller. In sharp contrast, Eidson describes an interface to process control devices in which controllers (*e.g.*, controllers 60, 61, and 62) communicate with process control devices (*e.g.*, devices 90, 91, 100, 110, and 112) via mappers (*e.g.*, mappers 70, 71, and 72). (Eidson, col. 3, line 59 - col. 4, line 4). Appellants note that the databases described in Eidson, such as the device-oriented interface database 32 and the device dictionary 38, are used by the mappers 70, 71, and 72 to communicate with the control devices 90, 91, 100, 110, and 112 using an appropriate device oriented protocol 14. In particular, the device-oriented interface database 32 includes information that describes the process control devices in terms of the device-

oriented protocol. The device dictionary 38 contains a set of predetermined device-specific information that is tailored in terms of the device-oriented protocol for each process control device supported by a mapper. (Eidson, col. 5, lines 30 - 38). Appellants further note that FIG. 3 of Eidson shows a dictionary server 54 that is connected to the communication network 52. This dictionary server 54 is used by the mappers to build device specific information in their respective device-oriented interface databases. (Eidson, col. 10, lines 21 - 29).

The December 15, 2005 Final Office Action (hereinafter "Final Action") states:

> Eidson discloses also the use of "sending the detected command to the controller" as a way of passing the information to the mapping processor... (Final Action, page 3).

It appears that the Final Action is alleging that the mapping processor 30 described in Eidson corresponds to the controller recited in the pending independent claims. Appellants respectfully submit that if the mapping processor 30 is alleged to correspond to the controller recited in the independent claims, then Eidson does not disclose or suggest detecting the stored command in the database and sending the detected command to the controller. That is, according to the Final Action, device specific information is passed to the mapping processor, which writes the information into a database. (Final Action, page 3; Eidson, col. 5, line 65, through col. 6, line 7). In sharp contrast to the recitations of independent Claims 1, 12, and 23, however, the device specific information is not detected in the database and then, once detected, passed to the mapping processor. In fact, according to Eidson, the mapping processor 30 stores the device specific information in the database so there would be no need to detect the information and then send the information back to the mapping processor 30. (Eidson, col. 5, line 65, through col. 6, line 7). The Final Action cites Srinivasan as disclosing the concept of detecting a stored command in a database (Final Action, page 3); however, as discussed above, the mapping processor 30 of Eidson stores device specific information in the database so one skilled in the art would not be motivated to use Srinivasan's teachings to detect the information and send the information back to the mapping processor 30.

Moreover, Appellants respectfully submit that Eidson does not disclose or suggest storing a command for a controller in a database where the command is selected from a write command that is configured to write a value of a real-time process control variable to the controller and a read command that is configured to read a value of a real-time process control variable from the controller as recited in independent Claims 1, 12, and 23. Instead, Eidson explains that "[t]he mapping processor 30 builds a set of configuration information into the device-oriented interface database 32. The configuration information which the mapping processor 30 builds into the device-oriented interface database 32 includes information that described the process control devices 20-22 in terms of the device oriented protocol 14." (Eidson, col. 4, lines 42 - 47; emphasis added). Thus, Eidson describes storing configuration information that describe process control devices in a database rather than a write and/or read command for a real-time process control variable as recited in independent Claims 1, 12, and 23.

In response to the above analysis, the Final Action asserts the following:

> Eidson discloses...the means wherein the information in the database includes a set of device specific information for each of the process control devices detected by the mapping processor, wherein the device specific information for a particular process control device includes information such as the number of variables associated with the process control device, the triggering requirement, wherein in general, each variable associated with a process control device maps to a channel (col. 4, lines 55-65). (Final Action, page 2 - 3).

The foregoing passage from the Final Action along with the reference to Eidson, however, appears to support Appellants' contention that Eidson describes storing configuration information that describe process control devices in a database rather than a write and/or a read command for a real-time process control variable as recited in independent Claims 1, 12, and 23. That is, the variables referred to in Eidson relate to device specific information and interface specific information. (Eidson, col. 4, lines 51 - 54). Appellants cannot find any disclosure or suggestion in Eidson regarding storing a command for a controller in a database where the command is selected from a write command that is configured to write a value of a real-time

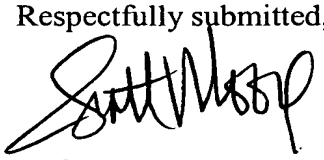
process control variable to the controller and a read command that is configured to read a value of a real-time process control variable from the controller.

For at least the foregoing reasons, Appellants respectfully submit that independent Claims 1, 12, and 23 are patentable over the cited reference and that dependent Claims 2 - 11, 13 - 22, and 24 - 33 are patentable at least by virtue of their depending from an allowable claim. Accordingly, Appellants respectfully request that the rejection of Claims 1 - 33 be reversed based on the failure of the Examiner to establish a prima facie case of obviousness under 35 U.S.C. §103 for at least these reasons.

II. Conclusion

In summary, Appellants respectfully submit that, with respect to Claims 1 - 33 the cited reference does not teach all of the recitations of the claims. Accordingly, Appellants respectfully request reversal of the rejection of Claims 1 - 33 based on the cited reference.

Respectfully submitted,



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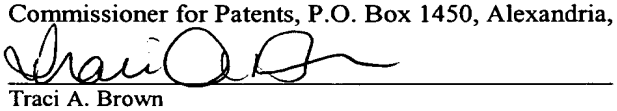

Traci A. Brown

APPENDIX A

1. (Previously Presented) A method of communicating with a controller in real-time, comprising:

storing a command for the controller in a database, wherein the command is selected from the group of commands consisting of a write command that is configured to write a value of a real-time process control variable to the controller and a read command that is configured to read a value of a real-time process control variable from the controller;

detecting the stored command in the database; and

sending the detected command to the controller.

2. (Previously Presented) The method of Claim 1, wherein detecting the stored command comprises:

verifying that the stored command is a valid command for the controller.

3. (Original) The method of Claim 1, wherein sending the retrieved command to the controller comprises sending a write command that is configured to write a first value of a first real-time process control variable to the controller, the method further comprising:

sending a read command that is configured to read the first value of the first real-time process control variable to the controller responsive to sending the write command that is configured to write the first value of the first real-time process control variable to the controller.

4. (Original) The method of Claim 1, further comprising:

receiving a response from the controller responsive to sending the retrieved command to the controller; and

updating a status of the retrieved command sent to the controller in a command table in the database to indicate whether the retrieved command sent to the controller succeeded or failed.

5. (Original) The method of Claim 4, wherein sending the retrieved command to the controller comprises sending a read command that is configured to read a first value of a first real-time process control variable from the controller, the method further comprising:

updating a current value associated with the first real-time process control variable in a tag table in the database with the first value of the first real-time process control variable read from the controller responsive to receiving the response from the controller.

6. (Original) The method of Claim 1, further comprising:

providing a tag table in the database that comprises definitions of a plurality of real-time process control variables, wherein each of the plurality of real-time process control variables is associated with a monitoring frequency and a current value;

periodically sending a read command that is configured to read a value of a real-time process control variable for respective ones of the plurality of real-time process control variables from the controller based on the respective monitoring frequencies; and

updating the respective current values for respective ones of the plurality of real-time process control variables with the respective values of the real-time process control variables read from the controller.

7. (Original) The method of Claim 6, further comprising:

providing a log module table in the database that comprises a list of at least one of the real-time process control variables defined in the tag table, wherein the at least one real-time process control variable is associated with a logging criterion; and

periodically reading the tag table for the at least one real-time process control variable in the log module table to obtain a current value associated therewith based on the logging criterion.

8. (Original) The method of Claim 7, further comprising:

comparing an age of the current value associated with the at least one real-time process control variable with a predefined age threshold;

storing the current value for the at least one real-time process control variable in a historical log table if the age of the current value associated with the at least one real-time process control variable does is less than the predefined age threshold; and

sending a read command that is configured to read a value of the at least one real-time process control variable from the controller if the current value for the at least one real-time process control variable is greater than or equal to the predefined age threshold.

9. (Original) The method of Claim 7, wherein the logging criterion is selected from the group consisting of a monitoring frequency, an event trigger, a percent change in value, and a client request.

10. (Original) The method of Claim 6, further comprising:

providing an event module table in the database that comprises a definition of at least one event based on at least one of the real-time process control variables defined in the tag table, wherein the at least one event is associated with at least one of a notification method and a stored procedure;

monitoring the current value of the at least one real-time process control variable to determine if the at least one event has occurred; and

performing at least one of the notification method and the stored procedure if the at least one event has occurred.

11. (Original) The method of Claim 10, further comprising:

providing an event log table in the database; and

saving the current value of the at least one real-time process control variable in the event log table if the at least one event has occurred.

12. (Previously Presented) A system for communicating with a controller in real-time, comprising:

means for storing a command for the controller in a database, wherein the command is selected from the group of commands consisting of a write command that is configured to write a value of a real-time process control variable to the controller

and a read command that is configured to read a value of a real-time process control variable from the controller;

means for detecting the stored command in the database; and

means for sending the detected command to the controller.

13. (Previously Presented) The system of Claim 12, wherein the means for detecting the stored command comprises:

means for verifying that the stored command is a valid command for the controller.

14. (Original) The system of Claim 12, wherein the means for sending the retrieved command to the controller comprises means for sending a write command that is configured to write a first value of a first real-time process control variable to the controller, the system further comprising:

means for sending a read command that is configured to read the first value of the first real-time process control variable to the controller responsive to the means for sending the write command that is configured to write the first value of the first real-time process control variable to the controller.

15. (Original) The system of Claim 12, further comprising:

means for receiving a response from the controller responsive to sending the retrieved command to the controller; and

means for updating a status of the retrieved command sent to the controller in a command table in the database to indicate whether the retrieved command sent to the controller succeeded or failed.

16. (Original) The system of Claim 15, wherein the means for sending the retrieved command to the controller comprises means for sending a read command that is configured to read a first value of a first real-time process control variable from the controller, the system further comprising:

means for updating a current value associated with the first real-time process control variable in a tag table in the database with the first value of the first real-time

process control variable read from the controller responsive to the means for receiving the response from the controller.

17. (Original) The system of Claim 12, further comprising:

means for providing a tag table in the database that comprises definitions of a plurality of real-time process control variables, wherein each of the plurality of real-time process control variables is associated with a monitoring frequency and a current value;

means for periodically sending a read command that is configured to read a value of a real-time process control variable for respective ones of the plurality of real-time process control variables from the controller based on the respective monitoring frequencies; and

means for updating the respective current values for respective ones of the plurality of real-time process control variables with the respective values of the real-time process control variables read from the controller.

18. (Original) The system of Claim 17, further comprising:

means for providing a log module table in the database that comprises a list of at least one of the real-time process control variables defined in the tag table, wherein the at least one real-time process control variable is associated with a logging criterion; and

means for periodically reading the tag table for the at least one real-time process control variable in the log module table to obtain a current value associated therewith based on the logging criterion.

19. (Original) The system of Claim 18, further comprising:

means for comparing an age of the current value associated with the at least one real-time process control variable with a predefined age threshold;

means for storing the current value for the at least one real-time process control variable in a historical log table if the age of the current value associated with the at least one real-time process control variable does is less than the predefined age threshold; and

means for sending a read command that is configured to read a value of the at least one real-time process control variable from the controller if the current value for the at least one real-time process control variable is greater than or equal to the predefined age threshold.

20. (Original) The system of Claim 18, wherein the logging criterion is selected from the group consisting of a monitoring frequency, an event trigger, a percent change in value, and a client request.

21. (Original) The system of Claim 17, further comprising:

means for providing an event module table in the database that comprises a definition of at least one event based on at least one of the real-time process control variables defined in the tag table, wherein the at least one event is associated with at least one of a notification method and a stored procedure;

means for monitoring the current value of the at least one real-time process control variable to determine if the at least one event has occurred; and

means for performing at least one of the notification method and the stored procedure if the at least one event has occurred.

22. (Original) The system of Claim 21, further comprising:

means for providing an event log table in the database; and

means for saving the current value of the at least one real-time process control variable in the event log table if the at least one event has occurred.

23. (Previously Presented) A computer program product for communicating with a controller in real-time, comprising:

a computer readable program medium having computer readable program code embodied therein, the computer readable program code comprising:

computer readable program code for storing a command for the controller in a database, wherein the command is selected from the group of commands consisting of a write command that is configured to write a value of a real-time process control

variable to the controller and a read command that is configured to read a value of a real-time process control variable from the controller;

computer readable program code for detecting the stored command in the database; and

computer readable program code for sending the detected command to the controller.

24. (Previously Presented) The computer program product of Claim 23, wherein the computer readable program code for detecting the stored command comprises:

computer readable program code for verifying that the stored command is a valid command for the controller.

25. (Original) The computer program product of Claim 23, wherein the computer readable program code for sending the retrieved command to the controller comprises computer readable program code for sending a write command that is configured to write a first value of a first real-time process control variable to the controller, the computer program product further comprising:

computer readable program code for sending a read command that is configured to read the first value of the first real-time process control variable to the controller responsive to the computer readable program code for sending the write command that is configured to write the first value of the first real-time process control variable to the controller.

26. (Original) The computer program product of Claim 23, further comprising:

computer readable program code for receiving a response from the controller responsive to sending the retrieved command to the controller; and

computer readable program code for updating a status of the retrieved command sent to the controller in a command table in the database to indicate whether the retrieved command sent to the controller succeeded or failed.

27. (Original) The computer program product of Claim 26, wherein the computer readable program code for sending the retrieved command to the controller comprises computer readable program code for sending a read command that is configured to read a first value of a first real-time process control variable from the controller, the computer program product further comprising:

computer readable program code for updating a current value associated with the first real-time process control variable in a tag table in the database with the first value of the first real-time process control variable read from the controller responsive to the computer readable program code for receiving the response from the controller.

28. (Original) The computer program product of Claim 23, further comprising:

computer readable program code for providing a tag table in the database that comprises definitions of a plurality of real-time process control variables, wherein each of the plurality of real-time process control variables is associated with a monitoring frequency and a current value;

computer readable program code for periodically sending a read command that is configured to read a value of a real-time process control variable for respective ones of the plurality of real-time process control variables from the controller based on the respective monitoring frequencies; and

computer readable program code for updating the respective current values for respective ones of the plurality of real-time process control variables with the respective values of the real-time process control variables read from the controller.

29. (Original) The computer program product of Claim 28, further comprising:

computer readable program code for providing a log module table in the database that comprises a list of at least one of the real-time process control variables defined in the tag table, wherein the at least one real-time process control variable is associated with a logging criterion; and

computer readable program code for periodically reading the tag table for the at least one real-time process control variable in the log module table to obtain a current value associated therewith based on the logging criterion.

30. (Original) The computer program product of Claim 29, further comprising:

computer readable program code for comparing an age of the current value associated with the at least one real-time process control variable with a predefined age threshold;

computer readable program code for storing the current value for the at least one real-time process control variable in a historical log table if the age of the current value associated with the at least one real-time process control variable does is less than the predefined age threshold; and

computer readable program code for sending a read command that is configured to read a value of the at least one real-time process control variable from the controller if the current value for the at least one real-time process control variable is greater than or equal to the predefined age threshold.

31. (Original) The computer program product of Claim 29, wherein the logging criterion is selected from the group consisting of a monitoring frequency, an event trigger, a percent change in value, and a client request.

32. (Original) The computer program product of Claim 28, further comprising:

computer readable program code for providing an event module table in the database that comprises a definition of at least one event based on at least one of the real-time process control variables defined in the tag table, wherein the at least one event is associated with at least one of a notification method and a stored procedure;

computer readable program code for monitoring the current value of the at least one real-time process control variable to determine if the at least one event has occurred; and

computer readable program code for performing at least one of the notification method and the stored procedure if the at least one event has occurred.

33. (Original) The computer program product of Claim 32, further comprising:

computer readable program code for providing an event log table in the database; and

computer readable program code for saving the current value of the at least one real-time process control variable in the event log table if the at least one event has occurred.

APPENDIX B – EVIDENCE APPENDIX

None

APPENDIX C – RELATED PROCEEDINGS APPENDIX

None.